Sunday – May 10, 2026		
12:00 18:00	**CONFERENCE REGISTRATION**	
Monday – May 11, 2026		
08:30 09:00	**CONFERENCE REGISTRATION**	
09:00 09:30	**OPENING CEREMONY (HALL A)** **Bestami Özkaya,** *Congress Chair, Vice-Rector of Istinye University, Türkiye* **İbrahim Dincer,** *President of National Hydrogen Association*	
	KEYNOTE SESSION 1 (HALL A) **Session Chair: Adolfo Iulianelli**	**EXHIBITION**
09:30 10:10	**Towards Intelligent Wearables and Systems** **Seeram Ramakrishna,** Tsinghua University, Xinghua, China	
10:10 10:50	**Toward Solar Hydrogen Production: Visible-Light-Induced Water Splitting via Z-Scheme Photocatalysis Systems** **Ryu Abe,** University of Kyoto, Japan	
10:50 11:10	**Coffee Break**	
	SPECIAL TALK (HALL A) **Session Chair: C. Ozgur Colpan**	
11:10 11:45	**Türkiye's Energy Strategies and Hydrogen Road Map** **Abdullah Bugrahan Karaveli**, *President of Turkish Energy, Nuclear and Mining Research Agency*	
11:45 12:45	**Honorary Doctorate Ceremony for Feridun Hamdullahpur** *(President Emeritus, University of Waterloo, Canada)* ***In recognition of his outstanding contributions to the academic world*** Keynote Talk: **From National Hydrogen Strategies to Practical Implementation: Cost, Challenges, and the Need for Standardized Green Hydrogen Evaluation** **Feridun Hamdullahpur,** President Emeritus, University of Waterloo, Canada	
12:45 13:00	**Group Photo (In front of the Main Entrance)**	
13:00 14:00	**Lunch Break** *(Main Campus, Istinye University, Ground Floor -Z13)*	

Monday – May 11, 2026

PARALLEL SESSIONS – 1

	HALL A	HALL B	HALL C	HALL D	HALL E	
	Session 1. Strategic Stakeholder Presentations **Session Chairs: C. Ozgur Colpan**	**Session 2. Green Hydrogen Production-I** **Session Chair: Mustafa Kemal Bayazıt**	**Session 3. Fuel Cell** **Session Chair: Mohammad J. Kermani**	**Session 4. Hydrogen Production – I** **Session Chair: Hakan Fehmi Öztop**	**Session 5. Ammonia** **Session Chair: Samira F. Kurtoğlu**	
14:00 16:00	**A Public Sector Perspective on the Hydrogen Ecosystem and Research Activities Conducted at TENMAK** **Ömer Faruk Tunçbilek** *TENMAK* **Waste-to-Energy** **R&D of İZAYDAŞ** Izmit Waste and Residues Treatment, Incineration and Evaluation Inc. (İZAYDAŞ) **H_2 Green Hydrogen Clean Hydrogen" to Net Zero Carbon** **Ali Rıza Arslan** *Hydrogenix* **Research and Innovations in the Hydrogen Sector** **Can Erkey** *KUHYTECH* **Carbon-bordered adjustment mechanism (CBAM) and hydrogen sector** **Ozay Civelek** *CSI Company* ***"Round Table discussion with all stockholders"***	**Invited Speaker** **Low-carbon energy transition pathways for the Philippines** **Alvin B. Culaba** *De La Salle University Manila, Philippines* **#161** "Design of a Hybrid Power Plant with Hydrogen Storage to Decarbonize the Port Area of Ajaccio (Corsica Island)" M. C. Choi, M. Hajjaji, T. M. Mai,C. Cristofari,S. Jemei #49 "Integrated Energy and Exergy Monitoring for Energy Systems Modeled in Modelica" T. Oswald, K. Ohlinger, K. Braun, M. Wensing **#7** "Global Trends in Green Hydrogen Production: Forecasting Future Scenarios" N. Ersoy **#311** "The Role of Educational Technology in Supporting Sustainable Energy Transition" Z. Z. A. Thaarig, M. J. Hussein, A. Wiyono, S. Kawakib Nurul Afiah **#295** "Global Hydrogen Emergence: A Review and Scenario-Based Outlook" S. Morozova; A. Karabuga **#6** "Optimization of Hydrogen Liquefaction Process using Liquefied Natural Gas (LNG) and Waste Heat Conversion Strategy" Q. H. Zeng, W. Wu	**#11** "Integrating Experimental and Modelling Approaches for Patterned Hydrophobicity in Polymer Electrolyte Fuel Cell Gas Diffusion Layers " F. Ç. Çankır; E. M. Can; S. Lyth; M. Ismail **#24** "Characterisation of PFPE/PVDF- Blended Microporous Layers for PEM Fuel Cells" Q. Ba; K. Zhang; M. Ismail; F. Calili-Cankir; D. Ingham; K. Hughes; L. Ma; M. Pourkashanian **#29** "Hybrid Optimization-Based Parameter Estimation of a PEM Fuel Cell Stack" Ö. F. Özcan; H. Kılıç **#55** "Flow and Thermal Analysis of PEM Fuel Cell Bipolar Plates with Surface Roughness" A. Kayalı; O. Çakır; A. Gürlek; B. Güney; R. Düzgün **#207** "Experimental Validation of 3D Flow Field Simulation for Straight Channel Bipolar Plates in PEM Fuel Cells" Thanh Van Nguyen, T. N. Vu, N. Q. Le, J. Woo, S. Yu **#144** "Experimental Investigation of Active Area Enlargement on the Performance of PEM Fuel Cells" F. Cetiner; M. Mentes; M. Alobeid; S. Celik **#135** "Characterization and Performance Analysis of Bulk Molding Compound–based Composite Bipolar Plates for PEM Fuel Cells" M. Menteş; F. Çetiner; S. Çelik; M. S. Çögenli; O. Yalçın	**#9** "Hydrogen Evolution Performance of 3D-Printed and Sintered Cu-WC Cathodes in Alkaline Media" M. Gezgin; E. B. Aydın; A. Erduman **#16** "Novel Sintered 3D-Printed La_2CuNiO_6 Double Perovskite Electrode for Alkaline HER Applications " E. B. Aydın; S. Ateş; G. Sığırcık; B. Yazıcı **#18** "Photocatalytic Hydrogen Production Over a Zr-Based MOF-Derived Photocatalyst Under Visible-Light Irradiation" M. Tripathi; K. Pooja; S. K. Ojha **#20** "Green Hydrogen Production from Household Kitchen Waste Via Dark Fermentation Using Cow Dung–Derived Anaerobic Microbial Consortia" K. P. S. N. Mishra; S. K. Ojha; M. Tripathi **#21** "Green Synthesis of Carbon Quantum Dots from Biomass-derived Precursors and their Application as Metal-free Electrocatalysts for Hydrogen Evolution Reaction" S. Ojha; K. Pooja; M. Tripathi **#43** "Effect of Calcination Temperature on Electrocatalytic Hydrogen Evolution Performance of Complex Metal Oxides and Perovskite Oxides" I. Kalkan; N. Y. Soylu; A. Koca **#45** "Synthesis and Performance Analysis of Surface Activated $CoFe_2O_4$ Nanoparticles for Efficient Hydrogen Production" M. Durmaz, M. S. Akkuş **#117** "Bimetallic Platinum-Containing Catalysts for Water Gas Shift Reaction: Structure and Performance" A. Gorlova; V. Pakharukova; V. Rogozhnikov; O. Stonkus; D. Potemkin	**#93** "An Environmentally Friendly Approach to Storage Systems in Energy Conversion: Digital Hydrogen and Green Ammonia" Ö. Tunçbilek; I. Ates **#188** "FeP/C Catalyst Synthesis by One-POT Pyrolysis for High-Performance Oxygen Reduction Reaction" I. Yılmaz; O. K. Özdemir; B. Aktaş **#194** " Effect of Sub-Chamber Nozzle Number on Ammonia/Oxygen Combustion in a Constant-Volume Combustion Chamber" R. Mahmud; L. Fang; T. Okada; X. Gu; E. Yilmaz; M. Ichiyanagi; T. Suzuki **#197** "CFD Investigation of NH_3–H_2 Fuel Blend Combustion in a Micro Turbojet Combustion Chamber with Comparison to Jet-A Fuel" F. Durmaz, Y. F. Gorgulu, S.Ekici, H. Karakoc **#233** "Techno-Economic Assessment of a Grid-Connected PV System for Poultry Farms using Homer Pro " S. Kapan; Z. U. Bayrak; N. Çelik **#240** "Sepiolite-Supported Ruthenium Catalysts for Cox-Free Hydrogen Production from Ammonia" S. Kurtoğlu-Öztulum **#276** "Radiolytic Ammonia Synthesis from N_2-Enriched Water: A Theoretical Kinetic Framework" A. C. Avci	**EXHIBITION**
16:00 16:30	**Coffee Break (with Poster Session-1)**					

Monday – May 11, 2026

PARALLEL SESSIONS – 2

	HALL A	HALL B	HALL C	HALL D	HALL E-Online	
	Session 6. Catalysts for Hydrogen Applications – I **Session Chair: Edwin Geo Varuvel**	**Session 7. Hydrogen Reaction Engineering** **Session Chair: Aysel Kantürk Figen**	**Session 8. Hydrogen Storage and Materials-I** **Session Chair: Hadi Genceli**	**Session 9. Green Hydrogen Production-II** **Session Chair: Nader Javani**	**Session 10. Sustainable Hydrogen Pathways** **Session Chair: Mert Sinan Turgut**	
16:30 18:45	Invited Speaker **Green Rust Catalysts for Hydrogen Storage Materials** **Yusuke Ide** *National Institute for Materials Science (NIMS), Japan* **#204** "Metal-Organic Framework Derived Carbon from Waste Precursors Towards Hydrogen Storage" H. Langmi **#266** "Investigation of Sc-Based XSc_3H_{8+y} (X = Li, Na, K, and y = 0, 1, 4) Hydrides for Hydrogen Storage Applications" Ö. Sürücü **#107** "PEM Water Electrolysis: A New Non-Critical Raw Material MoS_2-based Cathode Electrocatalyst for H_2 Production" S. Siracusano **#364** "Transition Metal Dichalcogenide/g-C_3N_4 Photocatalysts for Efficient Hydrogen Production via Formic Acid Decomposition" T. Fidan, M. Yurderi, A. Bulut, M. Zahmakıran, M. K. Bayazıt **#243** "Hydrogen-enriched Dual-fuel Combustion of Waste Tyre oil–diesel Blends in CI Engines" K. Suresh; L. J. M. M; E. G. Varuvel; J. Matijošius; A. Kilikevičius; U. Kale **#171** "$LaCoNiO_3$ Perovskite-Type Electrocatalyst for Photoelectrochemical Water Splitting" B. Yıldırım; M. İ. Aydın; A. K. Figen **#3** "Renewable–Hydrogen Hybrid Microgrid Design for University Data Center: Techno-Economic Assessment" F. Barlaz; M. Taban; C. Haydaroğlu; H. Kılıç	**#177** "Oxy-Fuel Combustion of High Hydrogen Content Mixture" H. S. Honamlı; B. Alabaş **#71** "Hydrogen Production Potential of Municipal Waste Streams: A Scenario-Based Assessment for Istanbul" F. Z. Sükür; Y. B. Akdeniz; B. Özkaya **#94** "Fed-batch Fermentation of Apple Pomace for Enhanced Biohydrogen Production" U. M. Yunusa; I. Karapınar **#52** "Valorization of Peach Processing Residues Via Simultaneous Saccharification and Fermentation for Sustainable Biohydrogen and Organic Acid Co-production" U. M. Yunusa; I. Karapınar **#98** "Kinetic Investigation of Catalytic Methane Decomposition Reaction for H_2 Synthesis Using Promising Ni-Co/MgO Catalyst" T. A. Boynuegri **#239** "Numerical Investigation on the Combustion Characteristics of Hydrogen/Air Mixture in Colorless Distributed Regime" O. Kekü **#362** "A Mediterranean Climate-Oriented Linear Fresnel Reflector-Based Solar Polygeneration System Integrated With Fuel Cell For Continuous Operation" S. Celik Toker, G. Soyturk, O. Kizilkan	**#58** "Surface Integrity and Subsurface Tailoring for Hydrogen Service: Impact of Laser Shock Peening Parameters" E. Gadalińska; D. Bricín; J. Kaufman; J. Šmaus **#60** "Analysis of the Heat Transfer Mechanism of MS-SOFC System" J. Kuo Kuo, W.-G. Jiang **#116** "Optimized La–MoS_2 Composite System for Improved Hydrogen Storage Capacity" A. Altuntepe **#174** "Waste Biomass–Derived Carbon Electrodes for Sustainable Hydrogen/Benzoquinone Disulfonate Hybrid Flow Batteries" B. Chakrabarti, R. Afshar Ghotli, Z. Kudaş, S. Chaudhuri, M. K. Bayazıt, A. Parra Puerto, F. S. Mjalli **#220** "Experimental Investigation of Metal Hydride Tanks for a Fuel Cell Powered L-Class Vehicle" S. Ongün; B. Sezgin; S. Yeter; S. C. Bozkır; M. U. Karaoğlan; M. A. Ezan; C. Ö. Çolpan **#248** "The Influence of Co and Pd Nanoparticle Doping on Hydrogen Storage Capacity of Multi-walled Carbon Nanotubes" S. K. Ergani; M. Kayfeci **#264** "A Modeling Framework for Metal Hydride–fuel Cell Thermal Coupling in Simulink-Simscape" S. Bozkır; M. A. Ezan; M. U. Karaoğlan; C. Ö. Çolpan **#251** "The Role of Metal Nanoparticles in Hydrogen Spillover on Carbon Nanotube Surfaces" S. K. Ergani; M. Kayfeci **#163** "Isothermal Steam Reforming and Partial Oxidation Co Removal for Proton Exchange Membrane Fuel Cells" M. T. Coban; M. Turgut; H. Genceli; M. Asker; O. E. Turgut	**#44** "High-Temperature Solar Thermal Integration for Enhanced Efficiency in Solid Oxide Electrolysis for Green Hydrogen Production" A. Lokurlu **#31** "Optimizing Electrode Selection for Dairy Wastewater Electrocoagulation: Hydrogen Production and Sludge Reuse Potential" A. Ibrahim **#59** "Coffee Waste-Derived Hydrochar-Epoxy Composite Electrode for Sustainable Hydrogen Production" A. Goren; I. Dincer; A. Khalvati **#120** "Impact of PV Capacity Sizing on the Cost and Carbon Performance of a PEM-based Green Hydrogen System" H. Şahin, M. S. Çetin, M. T. Gençoğlu, H. Esen, **#157** "Electrolysis of Water at Near-critical and Supercritical Conditions: An Emerging Advanced Technology for Efficient and Low-cost Green Hydrogen Production" A. Alsuhile; Y. Muyodi; F. S. Rikani; G. Gönel; C. Erkey **#189** "Performance Assessment and Degradation Analysis of a Large Scale PEM Water Electrolyser for Green Hydrogen Production" H. Sarıaltın **#332** "Effects of Hydrogen-rich Water Produced by Electrodialysis on Tomato Seed Germination: A Comparative Feasibility Study" R. Alshebli; B. Yuzer; Y. Bicer; M. F. Khalid; T. Ahmed **#96** "Design and Implementation of an Incremental Conductance Optimization–Based MPPT Scheme for PV-Driven Hydrogen and Fuel Cell Systems" Y. Zirekgür; C. Haydaroğlu; A. Orhan; H. Kılıç	**#36** "Co-Ferrite Driven Thermochemical H_2O/CO_2 Splitting for Solar Fuel Production" R. Bhosale; T. Legore **#37** "SNO_2/SNO REDOX System for Combined Carbothermal Reduction and Water Splitting Cycle" R. Bhosale **#64** "Optimizing La_2O_3-CeO_2 Support Composition for RWGS Over NiCu Catalysts Using Design of Experiments" M. B. Cutad; P. Ebrahimi; M. J. Al-Marri; A. Kumar **#73** "Performance Comparison of Stainless-Steel and Nickel-Coated Stainless Steel Foil Electrodes in a Two-cell Alkaline Water Electrolysis Stack" E. K. Oguz; I. Dincer **#75** "An Energy System Designed to Use Ammonium Formate and Captured Carbon Dioxide for Practical Applications" C. Turk; I. Dincer **#81** "Development and Thermodynamic Modeling of a Hybrid Neon-Brayton and Active Magnetic Refrigeration Cycle for Decentralized Hydrogen Liquefaction" D. Erdemir; I. Dincer **#82** "Design and Assessment of a Sustainable Waste to Hydrogen Energy System for Multiple Useful Outputs" A. Meke; I. Dincer **#90** "A Renewable Energy System Designed for Power, Heat, Cooling, Freshwater, Hydrogen and Chemical Production in Imperial Valley" S. Elmali; I. Dincer **#83** "Assessment of a Solid-state Hydrogen Golf Cart Based on Biomass Derived Activated Carbon" A. Capoglu; I. Dincer	**EXHIBITION**
19:00 20:30	**Welcoming Reception** *(Foyer)*					

Tuesday – May 12, 2026

PARALLEL SESSIONS – 3

08:30 09:30 — **Conference Registration**

HALL A

Session 11.
Membrane Technologies in H_2 Production, Separation, and Utilization
Session Chairs: A. Iulianelli

Invited Speaker

H_2 Chemical Storing in the Valorization of CO_2 Into Synthetic Methane Production Through an Integrated Fixed Bed Reactor and a Multi-Stage Bio-Polymeric Membrane Separation System

Alberto Figoli
Institute on Membrane Technology, Italy

09:30 10:30

#228 "Modeling of an Anion Exchange Membrane Electrolyzer with Soft Computing Models Based on CFD Simulations" H. Celik, U. Ergin, A. A. Ibrahim, S. Tumse, G. M. Ozkan, G. Kardas, H. Akilli

#237 "Comparative Investigation of PBI and PBI/MOF Composite Membranes for Anion Exchange Membrane Electrolyzers" H. Altınışık; Y. Devrim; C. Ö. Çolpan

#260 "Potoelectrochemical Hydrogen Production Using a Rotating Cu/$BaTiO_3$ Coated Ni Foam Electrode" S. Ayca; I. Dincer

HALL B

Session 12. Hydrogen Storage and Materials – II

Session Chair: Henrietta Langmi

#256 "Measuring Hydrogen Adsorption of the Coal Samples in Türkiye: Experimental Design and Key Considerations" Ö. İmir; Ş. Merey; A. Fişne

#343 "Synergistic Enhancement of Hydrogen Storage in Pillared Graphene@Ni-Mof-5 Composites at Ambient Conditions" N. Ertekin; M. Dehnavi, S. Rezaee, N. Silvestre, O. E. Moctar

#282 "Hydrogen Storage Performance ff CNT@Ni-MOF-5 Nanocomposites: Effects of CNT Incorporation and Temperature " N. Ertekin; S. Rezaee; O. E. Moctar

#297 "Metal/Mxene Heterostructured Catalysts for the Complete Dehydrogenation of Hydrazine–borane" B. Özçiçek; Z. Kafi; L. Şener; M. Gülcan

#298 "A Sequential Dual – Reactor Method for Blank – Corrected PCT Characterization: Application to Metal Hydrides" S. Bozkır; L. Claeys; M. A. Ezan; T. Depover; C. Ö. Çolpan

#308 "Pressure Transient Analysis for Hydrogen Storage Reservoir Characterization Using Injection-Falloff Tests" H. Aydin

HALL C

Session 13. Hydrogen Economy, and Policy

Session Chair: A. Gorlova

#172 "Magnetic Field Supported HHO Production: A Theoretical Study" K. Baltacıoğlu; H. T. Arat; O. Bulut

#217 "Design of Conceptual Fuel Cell Hybrid Unmanned Ground Vehicle for Geophysical Explorations with Ground Penetrenin Radar " S. T. Karaoğlan; M. U. Karaoğlan

#232 "Assessment of Hydrogen Blending and Hybrid Fuel Cell Systems for Improving Efficiency and Emission Performance in Marine Engines" O. Yüksel; K. Bayramoğlu; J. I. A. Torres; E. B. Davis

#17 "Prospective Well-to-Wake Emission Assessment of Hydrogen Fuel Pathways: A Case Study of Duqm as a Future Bunkering Hub" B. Zincir; B. Zincir

#344 "An Experimental Investigation of photovoltaic-based energy supply for FCEVs and BEVs" B. Burdin; Jordan Iliev, M. Rudarski, E. Slavcheva

HALL D

Session 14. Hydrogen Production – II

Session Chair: Naeimeh Sadat Peighambar Doust

#39 "Modeling the Dynamics of Decarbonization in the EU Hydrogen Industrial Sector" J. Campos-Rodríguez; Í. Capellán-Pérez; G. Parrado-Hernando; F. Frechoso-Escudero

#106 "Assessment of Wind-based Green Hydrogen Production Potential in the Marmara Sea Region" B. Zincir; B. Zincir

#114 "Efficiency Evaluation of Hydrogen Production Technologies: An FF-AHP Based Data Envelopment Analysis Approach" H. Kiriş; M. G. Güler; Ö. N. Bîlîşîk

#128 "MOF-801 Modified with Coffee Waste and Coffee Waste-derived Activated Carbon for Hydrogen Generation Via Sodium Borohydride Hydrolysis " S. Yolay; R. Ozdemir; D. Unlu

#149 "Kinetic Investigation of Hydrogen Generation from $NaBH_4$ Methanolysis Over Jujube-based Activated Carbon-supported Ruthenium Catalysts" N. Ö. Uçar

#130 "Numerical Analysis of a SMR Reactor with Designed Bionic Honeycomb-fin for Optimized Hydrogen Production" M. Kapan; M. Nuran; S. Yılmaz; H. Elçiçek; K. Bayramoğlu

HALL E

Session 15. Green Hydrogen Production – III

Session Chair: Heybet Kilic

#132 "Fabrication Of PdO/TiO_2 Nanotube Heterostructures for Hydrogen Sensing" E. Isik; M. Ozabaci; E. Butanovs; N. Kilinc

#38 "Hydrogen Production from Biomass via Catalytic Gasification of Sugar Beet Pulp" A. Sarıoğlan; M. Ateş; F. K. Albayrak; H. Okutan; N. Ayas

#76 "Hydrogen Production from Solid Recovery Fuel using Plasma-assisted Gasification" R. Nugroho; M. Azmi; T. Sopandi; C. Hongkhamdee; A. Cahyono; W. Wang; J. Kuo

#241 "Gasification of Aircraft Waste for Hydrogen-rich Syngas Production: A Sustainable Waste-to-energy Approach" F. Altay; B. Kiriş; A. Öngen; N. Semerci; N. Yeşilova; M. C. Altay; E. E. Songül

EXHIBITION

10:30 10:50 — **Coffee Break (with Poster Session-2)**

Tuesday – May 12, 2026

PARALLEL SESSIONS – 4

HALL A

Session 16. Membrane Technologies in H_2 Production, Separation, and Utilization – II
Session Chairs: Adnan Midilli

Invited Speaker
Membrane Technologies in the Decarbonisation of the Catalytic H_2 Production: from Carbon Capture to Electrification

Adolfo Iulianelli
National Research Council of Italy – Institute on Membrane Technology, Italy

#198 "A High-Gain Bidirectional Buck-Boost Converter with Reduced Input Ripple for HydrogenBattery Hybrid Energy Systems" D. Ertekin, A. Elkhateb, H. H. Ching lu

#209 "Design of an Ultra High Gain Step Up Power Processing Circuit for Proton Exchange Membrane Fuel Cell-Electric Vehicle Integrated Systems" D. Ertekin, P. Siano, O. Dordevic

#89 "From Topology to Functionality: Triazine–carboxylate Co/Ce-MOF as an Efficient Photocatalyst for H_2 Generation" K. Siddiqu

#118 "Deep Eutectic Solvent-based Synthesis of Fe and Ag Electrocatalysts for the Oxygen Reduction Reaction" S. Günes; A. Şahin; A. Aytaç; Ç. Güldür; A. Tapan

#365 "Diagnosis of PEM Fuel Cell Flooding Faults using 1d-cnn and Automatic Sensor Selection" E. Deniz, A. Sengur

#166 "Eco-smart Control: Deep Learning-Driven Thermal Optimization for Decarbonizing Hydrogen Fuel Cells" H. O. Ataç; M. Güçyetmez

HALL B

Session 17. Fuel Cells and Applications – I
Session Chair: Mustafa Umut Karaoğlan

#235 "Energy Management Strategy for a PV-PEM Fuel Cell-Battery Hybrid DC Microgrid" B. Yılmaz; M. Yıldırım; C. Ö. Çolpan

#247 "Investigation of Photocatalytic Water Splitting Over Reduced Nano TiO_2 Using Machine Learning" P. Özdemir; R. Yıldırım

#318 "AI-assisted PRE-CFD Framework for Hydrogen Combustion using Reduced-order Modeling and Mechanism Reduction" N. Kayakol; A. Twerda

#40 "Model Correlation and Control Strategy Optimization for a Heavy-duty Hydrogen Engine " A. B. Çiftçi; G. Tavşancı; E. Özgül; C. Cengiz

#119 "Safety And Stability Limits of H_2-enriched Flames in Perforated Burners: A Numerical Study" S. Yilmaz; R. Lamioni; F. Fruzza; K. Bayramoğlu; C. Galletti

#210 "Effect of Stoichiometry on Catalyst Degradation in PEMFCS Investigated by In-situ Humidity and Temperature Measurements within the Flow Field" T. N. Vu; N. V. Trinh; T. V. Nguyen; J. Woo; S. Yu

#286 "A First-Principles Investigation of the Structural, Electronic, and Stability Properties of Tif_2 and Janus Tifbr for Photocatalysis Application" B. Djonfaga, G. Surucu, M. Sahin

#68 "Architecture Selection and Mission-Cycle Evaluation of Fuel-Cell-Assisted Hybrid Electric Tactical 4×4 Vehicle under Mission Loads" E. Alpaslan; M. U. Karaoğlan; C. Ö. Çolpan

HALL C

Session 18. Hydrogen Conversion Systems

Session Chair: Ali Rıfat Boynueğri

#15 "From Materials to Roadmaps: Strategic Positioning of Boron in Hydrogen Energy Systems" G. Ç. Gül; M. Gül

#291 "Hydrogen Generation From $NABH_4$ Hydrolysis Using Cu, Fe and Ni Catalysts Supported on Sugar Beet Pulp-derived Activated Carbon" R. Özdemir; D. Unlu

#26 "Production of Methanol" M. E. İncirdere Demir; Ç. Aydin; A. Kemirtlek

#85 "Techno-economic Boundaries of Green Methanol Pathways" M. Gül; E. Akyüz

#323 "Hydrogen Production Via $NaBH_4$ Hydrolysis Using Stone Dust-supported Catalysts: Performance and Reusability Study" E. C. Özcan

#213 "Early Failure Prediction in PEM Fuel Cells Using CWT Based Image Transformation and Attention Enhanced Convolutional Neural Networks" S. Çelikdemir; M. Tan; M. T. Özdemir

#154 "Numerical Evaluation of Polarization Behavior in PEM Fuel Cells with Obstacles Placed in Flow Channels" Y. Daşdemirli, N. Yelegen, B. Kümük, M. Kayfeci.

#65 "Hydrogen evolution reaction electrocatalytic activity of $BaMn_{0.5}Co_{0.5}O_3$ perovskite oxide in alkaline medium" E. Fattahi, N. Nayerikouhestani, N. Delibaş, A.Çoruh, A.Niaei

HALL D

Session 19. Fuel Cell Materials

Session Chair: Hadi Heidary

#62 " The Effect of Hydrogen Utilization on Decarbonization: A Thermodynamic Evaluation " B. S. Önal; Z. Utlu

#178 "PEM Fuel Cell Volumetric Power Density Enhancement Using a Component-less Variable Porosity Foam as Flow Distributor" A. Alipour-Atani; M. J. Kermani; J. S.; H. Genceli; L. Wei; F. Jiang; N. Zatta; M. Guarnieri

#179 "PEM Fuel Cell Performance Enhancement Using Partitioned Metal Foam Flow Dsitributors" A. Alipour-Atani; M. J. Kermani; H. Genceli; H. Khani; M. Moein-Jahromi; S. Asghari; M. Modirshanechi

#145 "Robust Fault-Boundary Identification for PEMFCs Stack Voltage Using Teacher–Surrogate Learning" M. Zirekgür; C. Haydaroğlu; A. Şengür; B. Karakaya

#147 "Green-Synthesized Pt–CoMo@KC/C for PEMFC Cathodes: MEA Performance and MPP Centred Data Driven Analysis" A. Ekinci, Ş. Demir, M. Ş. Üney,

#152 "Electrochemical and Thermal Characterization of SPEEK/NAFION Composite Membranes for Direct Borohydride Fuel Cells" A. Khoshnoudi; M. D. Ali; G. Akay; K. Gebesoglu

#206 "Effect of Inlet Relative Humidity on PEMFC Stack Durability under WHVC-Based Accelerated Life Testing" N. Q. Le; N. D. Nguyen; T. T. Phan; J. Woo; S. Yu

HALL E-Online

Session 20. Green Hydrogen Production – IV

Session Chair: Fatih Sorgulu

#133 "Flexible Carbon Structures for Energy Applications" M. N. Dursunoğlu; M. I. Aydın; K. Kakaei; A. Bayrakçeken

#205 "Electrodeposited CoFeCuMoW Multi-element Alloy on Copper Foam: A Synergistic Design for Accelerated Hydrogen Evolution Reaction" L. Fathyunes; A. Bayrakçeken

#14 "Performance Analysis of a Hybrid Solar-Biomass System for Power and Hydrogen" F. Khalid; A. Ansari; U. Akbulut; A. Yazıcı

#74 "Techno-Economic Optimization of Solar-Powered Hydrogen Refueling Stations: A Case Study in High-Irradiance Regions (Haryana, India)" F. Khalid; A. Ansari; U. Akbulut; A. Yazıcı

#267 "Cybersecurity Monitoring of Cyber-physical Power-to-X Systems based on Artificial Intelligence: Application of Cyber-attacks Detection for Fuel Cell aided Cyber-physical Energy Systems" M. R. Habibi; A. N. Akpolat; S. Rahnama; K. Rupnik; G. Hultmark; A. Afshari

#244 "Hydrogen-assisted Lean Limit Extension and Emission Reduction in Gasoline Direct Injection Engines" J. S. M; L. J. M. M; E. G. Varuvel; J. Matijošius; A. Kilikevičius; U. K. U. Kale

#46 "Photoelectrochemical Hydrogen Systems: Bridging Fundamental Physics, Experiments, and Predictive Simulation" A. Niaei

#77 "Mathematical Modelling and Performance Analysis of Microbial Systems" A. Kilicaslan; I. Dincer

#327 " The Advanced and Sustainable Approach in Biohydrogen Production through Thermophilic Bacteria: a Comparative Study " A Zafar, S Zaffar, B.A. Ganai, S Yadav

#221 " Life Cycle Assessment of A Renewable-Powered Floating Storage and Regasification Unit for Ammonia and Hydrogen Fuels " D. Andriani, N. Mir, Y. Bicer

10:50 12:45						EXHIBITION
12:45 14:00	LUNCH (Main Campus, Istinye University, Ground Floor)					

Tuesday – May 12, 2026

PARALLEL SESSIONS – 5

	HALL A	HALL B	HALL C	HALL D	HALL E	
	Session 21: Premium Fuel Cells and Electrochemical Systems **Session Chair: Ramazan Solmaz**	**Session 22. Fuel Cells and Applications – II** **Session Chair: Ebru Erunal**	**Session 23. Sustainable Hydrogen Production** **Session Chair: Azize Ayol**	**Session 24. Renewable Hydrogen Technologies and Integration** **Session Chair: Fatih Yılmaz**	**Session 25. Hydrogen Use in Industrial Applications** **Session Chair: M. Iberia Aydin**	
14:00 15:50	**#167** "Sythesis of Highly Ordered ZrO2 Nanotube Arrays for Hydrogen Sensor Application " S. S. Inalkut Baglama, L. B. Tasyurek, E. Isik, S. Altin, N. Kilinc **#331** "Syngas Production from Gasification of Waste Polypropylene Under Atmospheric Conditions" B. C. Karadağ; N. Javanï; O. Yucel **#325** "Modeling of a Hydrogen Ecosystem Coupled with Intermittent Renewable Energy" Y. Mezghani **#309** "MPC-Based Residual Fault Detection for PEMFC–Battery Hybrid UAV Systems Under Dynamic Mission Conditions" M. Kayaoğlu; S. Ünal **#72** "3D Printable Cathode for Photovoltaic-powered Electrolyzer" B. D. Mert; H. Nazligül; M. E. Mert; K. M. Elattar; G. Aksaray; O. S. Sarisoy; Y. Gurdal; G. Kardaş **#317** "Thermodynamic Analysis of Green Ammonia Production System Integrated with Supercritical and Transcritical CO_2 Power Cycles" O. C. Cetin; M. O. Kirkar **#99** "H_2O_2 Electrooxidation Using Natural Tourmaline Mineral as Metal-Free Anode Catalyst" B. Alyakut; Ş. Kaya; Ö. Karaoğlu; E. V. Muratçay; I. Tokcan; H. D. Kıvrak	**#50** "Cyber–Physical Risk Assessment of Hydrogen Microgrids with Cascading Infrastructure Impacts" M. Bozdal; Z. Pourmirza **#185** "Decarbonisation Potential of Hydrogen-Assisted Sustainable Aviation Fuels: A Well-to-Wake Carbon Intensity Analysis" M. Yavuz; C.O. Colpan; I. Dincer **#262** "Decoupling Balance of Plant Energy Consumption in Industrial-scaled Modular PEM Water Electrolyzer Systems" E. D. Gülay; C.O. Colpan **#186** "3-D Modeling of an Anion Exchange Membrane Water Electrolyzer Using Comsol Multiphysics" A. Demirtas; C. O. Colpan; Y. Devrim; Y. N. Atak **#134** "Synergistic Pt-Sn Nanoparticles Anchored on Carbon Nanowalls for Efficient Hydrogen Generation Via $NaBH_4$ Methanolysis" B. A. Najri; E. Erunal; H. Kıvrak **#278** "Energy Analysis of Hybrid PV–Wind–Electrolyzer Systems with Electricity, Hydrogen, and Oxygen Production for Aquaculture Applications" O. Ural; C.O. Colpan **#320** " Battery/FC-Aware Multi-Agent UAV Communication and Task Offloading Optimization for Air Edge Computing Using MADDPG " B. Calisir M. Kayaoglu H. Biyik S. Unal, A. Akbal	**#175** "Evaluation of Ammonia Stripping as a Pretreatment for Biohydrogen Production from Ammonia-Rich Wastewaters" H. C. Yoruklu; B. Cancı; N. Manav-Demir **#176** "Effect of Cathode Electrode Material on Hydrogen Production in Microbial Electrolysis Cells: An Evaluation" B. Cancı; N. Manav-Demir **#180** "Kinetic Studies on Microwave Assisted Conversion of Methane to CO_X-Free Hydrogen Over Pd/La promoted Ni-Fe Based Catalysts " R. C. Seyfeli; H. P. Köse; C. Acar; D. Varişl **#181** "Comparison of unglazed and glazed PV-PCM based hydrogen production with electrolysis under Different climatic conditions" G. Görmez; T. Tanbay **#182** "Efficient Photocatalytic Hydrogen Evolution of Laponite-supported $NiTiO_3$/UT g-C3N4 Heterojunction "T. Kuru; Y. O. Akyıldız; A. Keleş; E. Aslan; İ. H. Patır **#30** "Assessing the Net Energy and Environmental Impacts of EU Hydrogen Deployment" J. Campos-Rodríguez; Í. Capellán-Pérez; F. Frechoso-Escudero **#293** "Integrated Biobed–Soil Microbial Fuel Cell for Olive Mill Wastewater Treatment: Long-term Operational Stability and Life Cycle Assessment" S. Güneş, A. Ayol	**#70** "Decarbonizing a Mediterranean Island through a Hybrid Wind-PV System with Multi Storage System" M. Hajjaji; T. M. Mai; M. C. CHOI; C. Cristofari; D. Mezghani; A. Mami **#164** "A New Hybrid Gain-scheduled Adaptive Neuro Fuzzy Inference Controller Design for Improving the Output Stability of a Fuel Cell Stack" G. Bayrak; D. Kilinc; M. Fistikcioglu **#302** "Design and thermodynamic assessment of a biomass-combustion based integrated system plant for liquid hydrogen generation with other beneficial products" F. Yılmaz; M. Ozturk **#303** "Enhancing solar and wind energy-based hybrid plant with compressed hydrogen storage: a comprehensive thermodynamic assessment" F. Yılmaz; R. Selbaş; M, Ozturk **#183** "In Situ Electrodeposition of MoSx on CNT for Electrocatalytic Hydrogen Production" Y. O. Akyıldız; T. Kuru; A. Keleş; E. Aslan; İ. H. Patır **#283** "Experimental Investigation of Hydrogen-Rich Syngas Production from Domestic Wastewater Sewage Sludge by Fixed-Bed Gasification" F. Altay; B. Kiriş; E. E. Songül; N. Yeşilova; M. C. Altay; S. B. Kiriş; A. Öngen **#307** "Development of a Reference Energy System for an Air Navigation Radar Station and Determination of a Sustainable Energy Technologies Roadmap" U. Kaya, E.Sulukan	**#105** "Recycling-driven Reprocessing of Used Nafion 212 Membranes and PtFe Reinforced Composite Fabrication for Sustainable PEM Applications" O. Ozdemir; J. H. Özdemir **#138** "Pt-Supported Cu-modified and Fluorinated g-C_3N_4 Cathode Catalysts for Proton Exchange Membrane Fuel Cell" M. E. Kenar **#139** "Effect of Biomass-Derived Activated Carbon–Containing Hybrid Support on the Cathode Performance of PdLaCr Alloy in PEM Fuel Cells" A. Ekinci **#292** "Energy-aware Channel Estimation for Hybrid PV–fuel Cell Powered Beyond-6g Networks: A Comparative Analysis of Accuracy and Hydrogen Consumption" H. Biyik; A. Akbal; M. Y. Çelïkdemïr **#124** "Development and Optimization of Granular Activated Carbon-supported Ni-Co Nanocatalysts Synthesized by EDTA Chelation Method for Hydrogen Production from Sodium Borohydride Hydrolysis" A. Seşe; M. S. Akkuş **#218** "Comparative Life-cycle Emission Analysis of Battery Electric, Fuel Cell Electric, and Internal Combustion Engine Buses" Y. E. Ekici, Habip Sahin	**EXHIBITION**
15:50 16:10	**Coffee Break**					

Tuesday – May 12, 2026

PARALLEL SESSIONS – 5

	HALL A	HALL B	HALL C	HALL D	HALL E-Online	
	Session 26. Fuel Cell Systems Optimization **Session Chair: Mert Sinan Turgut**	**Session 27. Intelligent Hydrogen Energy Technologies** **Session Chair: Seçil Turan Karaoğlan**	**Session 28. Hydrogen Supply Chain Systems** **Session Chair: Masood Jabarnejad**	**Session 29. Applied Hydrogen Energy Technologies** **Session Chair: Mehmet Karakılçık**	**Session 30. Electrocatalysis and Hydrogen Systems** **Session Chair: M. Mustafa Çetin**	
16:10 18:30	**#160** "Hydrogen Fuel Cell Assisted Fixed-Time Sliding Mode Virtual Inertia Control for Frequency Regulation in a Hybrid Microgrid" Ö. F. Özcan; H. Kılıç **#265** "Dynamic Modeling and Energy Management of a PEM Fuel Cell-Battery Powered PMSM Drive System" M. Yildirim **#269** "Recent Advances in Structure–Property–Performance Relationships of Polybenzimidazole-based Composite Membranes for High-Temperature PEM Fuel Cells: A Review" A. H. Ali; R. G.Akay **#112** "Hydrogen-Aware Event-Triggered Distributed Secondary Control for a PEMFC/Battery DC Microgrid under Faults and Communication Impairments" I. Poyraz; H. Kilic; M. E. Asker **#212** "An Optimized Model Predictive Control Approach for Frequency Stability in Archimedes Screw Turbine Based Renewable Energy Microgrids" S. Çelikdemir; M.A. Köprü; D. Öztürk; M.T. Özdemir **#3** "Renewable–Hydrogen Hybrid Microgrid Design for University Data Center: Techno-Economic Assessment" F. Barlaz; M. Taban; C. haydaroğlu; H. Kılıç **#216** "A Novel Stability Driven Metaheuristic with CNN-Attention for Degradation Modeling of PEM Fuel Cells" M. TAN; M. Y. Çelikdemir; S. Yıldız **#100** "Evaluation of the Catalytic Performance of Natural Sphalerite Mineral in $NaBH_4$ Electrooxidation and Methanolysis Reactions" B. Alyakut; Ş. Kaya; Ö. Karaoğlu; E. V. Muratçay; I. Tokcan; H. D. Kıvrak **#141** "Data-Driven Evaluation of Green-Synthesized Co-Doped Titanium Nanotube Nanocatalysts for Sustainable Hydrogen Generation" S. Turgut, A. Ekinci, Ö. Şahin, M. Ş. Üney, O. Baytar **#54** "Development of Sulfonated Electrospun PVDF/PVA Composite Proton Exchange Membranes for Fuel Cell Applications" F. U. Nigiz	**#272** "AI-based Health Assessment Approach for Inverters Used in P_2H Systems" M. S. Kalay; A. N. Akpolat **#236** "Adaptive Neuro-fuzzy Control of a PEMFC-FED Boost Converter for Improved DC-Link Voltage Regulation" A. Yılmaz **#203** "Observer-Assisted Power Sharing Under Parameter Mismatch in Parallel-Connected Hydrogen Power Units" H. Erdoğan **#215** "Reinforcement Learning-Based Adaptive Metaheuristic Algorithm for Parameter Estimation of Proton Exchange Membrane Fuel Cells and Photovoltaic Models" S. Yıldız **#249** "Cybersecurity Vulnerabilities in FCEV Battery Management Systems" H. Gunduz **#226** "Severity Level Identification of Harmonic Disturbances in Hydrogen Fuel Cell Microgrids Using Machine Learning" S. Akkaya; E. Çakmak **#250** "Development of Cu-Doped ZnO Photoelectrodes for Efficient Photoelectrochemical Hydrogen Production" S. Sahin, I. Dincer **#259** "Statistical Design and Model Reliability in Experimental PEM Fuel Cell Performance Studies: A Critical Review and Perspective" G. Tol; C. Celik; F. G. B. San **#165** "Environment-oriented Harmonic Mitigation in PMSM Drives of Hydrogen Fuel Cell Vehicles Toward Emission-linked Efficiency Enhancement" A. A. Ateş; M. Güçyetmez; S. Akkaya; Ş. E. Hayber **#113** "Optimized Event-Triggered Control for Robustness and Efficiency in Solid Oxide Fuel Cells " I. Poyraz; H. Kilic; M. E. Asker	**#195** "Resilient Hydrogen Supply Chain Network Design Under The N-1 Contingency Criterion " M. Jabarnejad; M. G. Güler **#305** "Milestones, Trends, and Future Directions in Hydrogen Logistics and Supply Chain Regulatory Framework: A Bibliometric Analysis" R. Yıldız **#255** "Hydrogen Supply Chain: A Review in Life Cycle Assessment Perspective" B. Albayrak **#289** "A Study on Power Supply Strategies for Green Hydrogen Production Facility with 5 MW PEM Electrolyser" B. Şahin; A. Midilli **#329** "Robust Load Frequency Control for Hydrogen-Fuel-Cell-Powered Data Center Microgrids" H. Gunduz **#242** "Anion Exchange Membrane Electrolyzer Performance of Graphene Oxide Containing Composite Membranes "H. Altınışık; Y. Devrim; E. Özalp **#214** "Short Term Hydrogen Production Forecasting Using DWT-Based Hybrid Machine Learning Models" M. Y. Çelikdemir; M. Tan; M. T. Özdemir **#190** "Techno-Economic Assessment Nuclear-Powered Multigeneration System: a Case Study of the Akkuyu Nuclear Power Plant" M. Gursoy **#202** "Reward Shaping Strategies for Safe Deep Reinforcement Learning in Electrochemical Energy Conversion Systems " H. Erdoğan **#333** "Energy and Exergy Analysis of a Hydrodesulfurization Unit " Ö. Dilmanç; R. Sadaa	**#102** "Culture-Inspired Bipolar Plates for Next-generation PEM Fuel Cells" H. Heidary; S. Walker; V. Nasrollahi; S. Dimov **#143** "A Neutrosophic Logic-based Health-aware Control Framework for Fuel Cell Hybrid Electric Vehicles" B. A. Kus; H. Kılıç; H. S. Ramadan **#290** "Investigation of the Energy and Exergy Efficiency of a PEM Fuel Cell Under Air-Cooled and Non-Cooled Conditions" M. Karakılçık; B. M. Guzelgun; E. Durar **#199** "Comparative Technical Evaluation of Geological Hydrogen Storage Options" H. Karakilcik **#211** "Design [HG2.1]and Economic Analysis of a Hydrogen Energy Integrated Hybrid Microgrid for Thermal Facilities" M. A. Köprü; S. Çelikdemir; D. Öztürk; M. T. Özdemir **#341** "Investigation of Hydrogen Production Performance of Sodium Chloride (Nacl) in a Three-Pole Chlor-Alkali Reactor" E. Durar; H. Karakılçık; B. M. Guzelgun; A. Atiz; M. Karakılçık; **#342** "Investigation of Hydrogen Production Performance of Potassıum Chlorıde (Kcl) in a Three-Pole Chlor-Alkali Reactor" H. Karakılçık; E. Durar; B. M. Guzelgun; G. Satak; S. Damarseckin; A. Atiz; M. Karakılçık; **#33** "NiFe-MOF Composite-Doped Nickel Foam Electrode for Hydrogen Production using Electrolysis Process " A. Goren, I. Dincer **#56** "Comparative Life Cycle Assessment of $LaCoO_3$ and $BaCoO_3$ Perovskites Synthesized via Sol-Gel and Electrospinning for Water-Splitting Electrodes" A. Zendehdaman, M. G. Khosroshahi, E. Mahmoudi, H. At. Eroğlu, A. Najafpoorsani, A. Niaei, N. Delibaş, A. Çoruh	**#126** "Investigation of Fuel Concentration and Stirring-induced Hydrodynamics in a Formic Acid Fuel Cell Using Copper Mesh Electrode" O. R. Sozbir; I. Dincer **#69** "Experimental Evaluation of Copper Oxide Foil Photoelectrodes with Different Geometries" M. Ayoub; I. Dincer **#79** "Investigation of an Improved Magnesium-water Hydrogen Production Method" Y. Hafez; I. Dincer **#192** "Modelling, Simulation and Design of a Proton Exchange Membrane Unitized Regenerative Fuel Cell (PEM-URFC) " P. Duarah **#4** "Speed Control Based on Fuzzy Logic Control for a Fuel Cell Powered Permanent Magnet Synchronous Motor" C. haydaroğlu; S. Doğan; B. Gümüş; A. Mohammadzadeh **#285** "Synthesis and Evaluation of Melamine-Assisted Nickel Catalysts: Effect of Electrolyte Temperature on the Oxygen Evolution Reaction" E. P. Kumari; A. Ashok; A. Kumar; F. Tarlochan; M. J. Al-Marri **#193** "Electrochemical and Mechanical Optimization of a 5-Cell Closed-Cathode PEM Fuel Cell Stack for UAV Applications" M. Khan; F. Weng; D. A. Atabani **#301** "Quantum Computing for Power-to-X Systems: Application of Quantum Artificial Intelligence for Fuel Cell aided DC Microgrids" M.R. Habibi; A. N. Akpolat; S. Rahnama; K. Rupnik; G. Hultmark; A. Afshari **#129** "Design and Assessment of a Renewable-hydrogen Integrated Indigenous Community Energy System " A. E. Dedeoglu; I. Dincer	**EXHIBITION**
19:00 21:00	**Banquet (Gala Dinner)** (Main Campus, Istinye University, Ground Floor)					

Wednesday – May 13, 2026

PARALLEL SESSIONS – 6

09:00 09:30	Conference Registration				
09:30 10:30	**HALL A** **Special Session 31. Next-Generation PEM Fuel Cells and Electrolyzers: Materials, Catalysts, and Flow Field Optimization** **Session Chair: M. Hussein N. Assadi** **Performance Enhancement of PEM Fuel Cells Using Blockage-Enabled Bipolar-Plate Flow Fields** **Mohammad J. Kermani** *Amirkabir University of Technology,Iran* *Center for Solar Energy and Hydrogen Research (ZSW), Germany* **Hadi Genceli** *Yildiz Technical University, Istanbul Türkiye* **Bridging Materials Science and Hydrogen Technologies: Membranes and Catalysts for Fuel Cells and Electrolyzers** **Selmiye Alkan Gürsel** *Sabanci Univeristy, Istanbul, Türkiye* **The ion implantation laboratory and other facilities at UFRGS** **Raquel Giulian** *Institute of Physics, Federal University of Rio Grande do Sul, Porto Alegre, Brazil*	**HALL C** **Session 32. Clean Energy Innovations** **Session Chair: Özüm Çallı** **#196** "Investigation of Pyro-liquid Fuel Characteristics via Multi-Stage Catalytic of MSW in Diesel Engine and Pyro-Stove" A. Wiyono; N. Celik; P. Zuldian.; M. Aziz; F. Abdurrahman **#13** "Achieving LOEST NO_X Emission, Highest Combustion Efficiency and Controlled NH_3 Slip with Optimized NH_3-Coal Mixing in A 50KW Self-Sustained Co-firing Combustor " Y. Zhang; Y. Wang; X. Guo; S. Zhang; M. Zhang; G. Dai; Y. Zhang; X. Wang; H. Tan **#335** "Machine Learning for Predicting Green Hydrogen Production Across Diverse Geographical Regions: A Comparative Study with SHAP Analysis" Ö. Çallı **#246** "Machine Learning-Based Transformer Fault Classification by Dissolved-Gas Analysis" D. Kaya; İ. Görgöz; M. Cebeci	**HALL D** **Session 33. Hydrogen Production-III** **Session Chair: Ismail Ekmekci** **#326** "Performance Optimization of Hydrogen-blended CCPP Using Aspen Simulation: A Case Study from Türkiye" R. Karabeyaz, E. B. Şimşek **#328** "A Hybrid Deep Learning Framework Integrating Molecular Hydrogen-based Antioxidant Modeling for Retinal Disease Classification" R. Coskun; H. Guler **#34** "Modeling an Integrated Sludge Drying–gasification–CHP System for Hydrogen-ready Deployment" C. Koyunoglu; M. Tolay; I. Ekmekci **#254** "Solar-Thermal Hydrogen Production from Natural Gas: A Techno-Economic Assessment" I. Ekmekci **#184** "Investigation of Gas Crossover Phenomenon in Anion Exchange Membrane Electrolyzers: Numerical and Thermodynamic Modeling" M. T. Panah; E. Baniasadi; E. Afshari; H. Genceli	**HALL E** **Session 34. Hydrogen Production-IV** **Session Chair: Mahmut Temel Ozdemir** **#8** "Hydrogen Integration in Gas Distribution Networks: Technical, Systemic, and Policy Perspectives" Ö. B. Gülergül; İ. Horoz; A. Yetik **#142** "Reduced-order RIC Modeling and Model Predictive Control of Hydrogen-enriched Natural Gas Pipeline Networks" B. A. Kuş **#200** "Design of a Coil-wound PRE-cooling Heat Exchanger for Hydrogen Refueling Stations Using a CO_2/R404A Cascade Refrigeration System" K. Yüksel; M. Bilgili **#158** "Model Based Assessment of Various Configurations of Emission Aftertreatment System of a Hydrogen Fueled Truck for Meeting EU7 Targets" S. E. Bozbağ; T. B. Sarı; C. Cengiz; D. Ş. Yıldız; C. Erkey	**EXHIBITION**
10:30 10:50	Coffee Break				

Wednesday – May 13, 2026

PARALLEL SESSIONS – 7

	HALL A	HALL C	HALL D	HALL E	
	Session 35. Energy Conversion and Technologies **Session Chair: M. Hussein N. Assadi**	**Session 36. Electrolysis and Electrolyzer Technologies** **Session Chair: Bilge Coşkuner Filiz**	**Session 37. Hydrogen Storage Systems** **Session Chair: Arif Hepbaşlı**	**Session 38. Hydrogen Economy, Infrastructure, and Policy** **Session Chair: Arif Karabuğa**	
10:50 12:25	**#279** "Development of SPEEK/PU Mats and the Effect of Carbon Nanotubes on the Electrospun SPEEK/PU Mats for Highly Stable and Conductive Fuel Cell Membranes" A. khoshnoudi; A. Aytac; S. SAMATYA; R. G. Akay **#294** "Data-Driven Optimization of Hydrogen-Rich Syngas Production from Biomass Gasification Using Machine Learning" M. U. Öztürk; Ö. Tezer; A. Ayol **#101** "Laser Surface Patterning of Microtubular Solid Oxide Fuel Cells" Y. C. Turanoglu; A. A. Sunecli; C. Timurkutluk; B. Timurkutluk **#115** "Techno-Economic Analysis of High-Carbon-Abatement Domestic Saf Pathways for Decarbonization Performance "H. Bıyıkcı, M. Er **#92 "**Sucrose-derived Co@CQDS for Hydrogen Production from Ammonia Borane Hydrolysis: Effect of Synthesis Medium " M. S. İzgi; Ö. Şahin;S. Ekinci; Z. Çelik; E. Onat	**#5** "Water Consumption Implications of Electrolyser Technologies: A Comparative Review for Sustainable Hydrogen Deployment" S. Uçar **#32** "Model-Free Predictive Control of Hydrogen Fuel Cell Inverters Based on Dynamic Forgetting Recursive Least Squares" S. Shahzad; M. Abbasi; H. Kilic **#136** "Density Functional Theory Analysis of IrO_2/MnO_2 Catalysts in Seawater Electrolysis" A. Albadwi; M. F. Kaya **#137** "Nickel Foam Electrodes for Water Electrolysis from Powder Metallurgy Technique" S. Sevinç; M. F. Kaya **#271** "Simulation and Energy Self-sufficiency Analysis of Municipal Sewage Sludge Pyrolysis" M. U. Öztürk; E. D. Gülay; C.O. Colpan; A. Ayol **#304** "Geothermal Energy–based Hydrogen Production Via an Orc Using Mixed Refrigerants" P. Heidarnejad; A. Karabuga; H. Genceli **#274** "From Industrial Wastewater to Green Hydrogen: Enhanced Photoelectrocatalytic Performance of Zn-Tio2 Electrode" A. E. Ateş, S. Ateş #57 "Development and Simulation of Real-Time Energy Management Strategies for Hybrid Autonomous Vehicles Equipped with a Fuel Cell, Battery, and Supercapacitor" H. Kızılay, B. Tanç	**#28** "Degradation Aware Sizing of Fuel Cell-Battery Hybrid Powertrains for Heavy Duty Trucks Under Realistic Drive Cycles" E. I. Y. Kaplan; C. Erkey **#61** "Grey Wolf Optimized Fuzzy Control for a Gasoline–Hydrogen Dual-Fuel Engine Considering Carbon Emissions and Fuel Cost" C. Huang **#95** "Techno-economic Comparison of Fuel Cell and Hydrogen Internal Combustion Engine Applications in Long Haul Heavy-duty Truck Application" E. Özgül **#125** "Strategic Evaluation of Hydrogen Storage Technologies for Heavy-duty Vehicles in Europe: A Scenario-based ANP" M. Altas; M. S. Yazici; D. Guven; M. O. Kayalica **#159** "WLTC Energy and Emissions Assessment of a Hydrogen-enriched Gasoline Passenger Car Using Engine-Bench Testing and AVI Cruise Modeling" A. Rimkus; S. Pukalskas; T. Vipartas; J. Matijošius **#173** "Simulational Analyses of a Fuel Cell Electric Truck" K. Baltacıoğlu; H. T. Arat; M. T. Başar **#231** "P2X-based Hydrogen Supply Concepts for Decarbonization in Offshore Drilling Platforms" A. N. Akpolat; U. Demir **#345** "Finite-Time Thermodynamics and Multi-Objective Optimization of Knock-Limited Port-Injected Hydrogen Engines" E. Arabacı, S. Halis, E. Boğar, Ö. Atalay	**#103** "Enhanced Performance of Halloysite Supported Electrocatalyst in Alkaline Sodium Borohydride Oxidation" B. Küçüksarı; K. Celep; H. E. Figen; M. K. Elibol **#104** "PEG-Assisted Pulse Electrodeposition for Tailored HUPD Behavior of Platinum" J. H. Özdemir; B. Aktaş; A. K. Figen; O. K. Özdemir **#338** "Ultracapacitor-centric Energy Management for Fuel Cell Electric Vehicles: NSGA-iii, PSO, and Rule-based Comparison on Real WLTP Drive Cycle Data" N. Aksoy; A. Yılmaz **#263** "Analysis of Hydrogen Consumption in the Toyota Mirai Fuel Cell Vehicle" D. Yağci; H. Genceli; O. E. Turgut **#313** "Route-dependent Energy Analysis of a Hydrogen Fuel Cell Hybrid Bus: Simulation and Multi-route Comparison" U. Tezcan , 1*, K. İnam **#201** "A Comparative Review of Composite Pressure Vessel Technologies for Hydrogen-powered Air Vehicles" M. Bilgili; İ. O. Çakır **#310** "Development of Sustainable PLA/PBS/MWCNT Composite Membranes for Direct Methanol Fuel Cell Applications" A. H. ALI; E. Aydın **#275** "Ag-Modified CeO_2–TiO_2 Heterostructures for Enhanced Hydrogen Evolution" M. Behroozi; E. Doustkhah **#148** "Storage of Renewable Energy Sources" S. Süleymaniyeli; B. Tanç	**EXHIBITION**
12:50 13:30	**LUNCH (Main Campus, Istinye University, Ground Floor)**				

Wednesday – May 13, 2026

14:00 – 14:20 — **NHA AWARDS CEREMONY & REMARKS (HALL A)**

PARALLEL SESSIONS – 8

14:20 – 16:20

HALL A

Special Session 39. Advanced Materials Design; Energy Conversion and Technologies
Session Chair: Selmiye Alkan Gürsel

Enhancement of the Catalytic Activity of Prussian Blue through Cyanide Vacancies

Juliano Alves Bonaccin
University of Campinas, São Paulo, Brazil

Atomistic Insights into the Opto-Electronic Properties of Novel 2D and Layered Materials

Maurizia Palummo
University of Rome Tor Vergata, Rome, Italy

Role of Iron in Solar-Driven Water-Splitting Silicon Photoanodes
Pichaya Pattanasattayavong
Vidyasirimedhi Institute of Science and Technology (VISTEC), Thailand

Entropy control for improved photocatalytic response in complex oxynitride systems

Jan Lancok
Institute of Physics of the Czech Academy of Sciences, Prague, Czechia

Theory-Guided Design of Functional Materials for Energy Conversion

M. Hussein N. Assadi,
RIKEN Center for Emergent Matter Science (CEMS), Wako, Japan

HALL C

Session 40. Hydrogen Integrated Energy Systems

Session Chair: M. Kaan Baltacıoglu

#296 "Reactor Configuration Effects on the Energy and Exergy Performance of Metal Hydride Hydrogen Storage Systems" N. I. Beyazit

#78 "Assessing Compressor Map Model Sensitivity to Local Efficiency Improvements in Heavy-Duty FCHEVs" B. Dursun; Ö. Andersson; P. Tunestål; L. Eriksson

#168 "A Numerical Investigation on Soot Formation in Atmospheric Hydrogen-enriched N-dodecane Laminar Jet Flames" A. Korucu

#324 "The Role of Hydrogen in Achieving Istanbul's 2050 Net-Zero Emission Target: A Multi-Criteria Approach" N. Ayla; B. Özkaya

#306 "A Study on Conceptual Design Parameters For a 4 MW PEM Electrolyzer Integrated with Wind Energy System Including High Compressed Hydrogen Gas Storage System" A. Aluç; A. Midilli

#229 "A Study on Exergetic Sustainability and Economic Parameters of a Green Hydrogen Production System with 4 MW Alkaline Electrolyzer" A. Aluç; A. Midilli

#245 " Catalytic Transformation of Nitrate-Rich Wastewaters Into Ammonia: Mechanisms and Catalyst Performance in Hydrogen Economy " B. C. Filiz, H. C. Yörüklü, A. K. Figen

HALL D

Session 41. Electrolyzers

Session Chair: Bora Timurkutluk

#150 "Development Of Hydrothermally Coated MnO_2–IrO_2 Composite Electrodes on Ni Foam for Alkaline Seawater Electrolysis" A. Ouattara; A. Albadwi; M. Kıstı; G. Özkırar; S. Sevinç; B. Hüner; M. F. Kaya

#153 "Numerical Investigation of Flow Field Design on The Performance and Efficiency of PEM Water Electrolyzers" M. Kahveci; B. Kümük; O. Aslan; M. Yılmaz; T. Koca; M. Kayfeci

#252 "Pt-Pd Metal Aerogels as Carbon-Support-Free Electrocatalysts for PEM Fuel Cells and Electrolyzers Synthesized by a Novel Route: Supercritical Transmetalation " S. M. S. Heris; S. E. Bozbag; C. Erkey

#257 "Integrated SOE-MCFC Architecture for Improving Power-to-gas Methanation Systems" J. Milewski; J. Zdeb; A. Szczesniak; A. Martsinchyk; J. Kupecki; O. Dybinski

#287 "Comparison of Traditional Aviation Fuels and Sustainable Aviation Fuels" M. Kus, Z. U. Bayrak

#316 "Development of Hybrid Supported Transition Metal Phosphide Electrocatalysts for Hydrogen Evolution Reaction "C. Limon, H. E. Figen

#151 "Techno-Economic and Environmental Assessment of Renewable-Derived Hydrogen Production and Blending in Natural Gas-Fueled CHP Systems: A Large-Scale Case Study in Antalya" C. Kale

#261 "Optimization of Green Hydrogen Production Via Deep Reinforcement Learning: A Proximal Policy Optimization Approach" N. Aksoy

HALL E

Session 42. Hydrogen Vehicles

Session Chair: Merve Öztürk Kırkar

#191 "Machine Learning and Explainable AI for Emission Prediction in Hydrogen-enriched HVO–Biogas Engine" A. Rimkus; A. Rimkus; J. Matijošius; F. Josephin; E. Varuvel; E. Varuvel; D. Šlevinskas

#219 "Simulation-based Energy Management and Realistic Range Analysis of Fuel Cell Hybrid Electric Buses" S. Sülün; Y. Ateş

#222 "Investigation of Cold Plate Integrated Fuel Cell and Battery Hybrid Propulsion Systems in Small Boats" V. Tekin; A. Korkmaz; C.O. Colpan; O. Konur

#224 "Energy and Environmental Performance Analysis of Hydrogen Fuel Cells in Center Power Systems" Y. A. Yildiz; S. E. Hayber; M. Uyar

#225 "Solar-based Hydrogen Production for Sustainable Railway Transportation: A Regional Assessment for Istanbul" Y. A. Yıldız; M. Uyar

#121 "Reduction of Chromite Ore with H_2 at High Temperature" A. Deniz; C. E. Zohra, S. Kan, C. Imer, G. Basman, Y. Kaya, O. Yücel

#315 "DWT-Based Feature Extraction with Iterative Feature Selection for Multi-Class Operating Condition Classification of PEM Fuel Cells" A. Akbal; B. Çelik

#127 "Thermal Image Processing and Machine Learning-Based PV Panel Power Prediction and Soiling Analysis" G. G. Katırcıoğlu; E. Akpinar; Ç. Kaymak; M. Daş

EXHIBITION

16:30 – 16:45 — **CLOSING REMARKS (HALL A)**

Poster Sessions Chair: Ömer Faruk Tutar

Poster Session – 1 (Monday – May 11, 2026 | 16:00 – 16:30)

π12 "Hydrogen Evolution Using Graphitic Carbon Nitride as Catalyst Under Visible Light**"** *A. Alsalme*

π22 "Modeling of The Effect of Air Flow Rate on the Performance of a SPEEK Membrane PEM Fuel Cell Using COMSOL Multiphysics" *Z. Dere*

π27 "NO_x Formation in Coal-Ammonia Co-Combustion for Cement Calciner: Effects of Catalyst Type and Temperature**"** *X. Yao; S. Zhang; Y. Zhang; X. Wang*

π41 "Synergistic Effect of Microwave-Synthesized MoS_2 and Sol-Gel Derived $SrFeO_3$ Composite for Photoelectrochemical Performance*"* *Y. Altun; Ş. Meydan; B. Vuranlar; E. Zoroğlu; S. Üney; İ. kaba; İ. Kalkan; E. Ö. Güven; F. Karaca; A. Koca*

π42 "Photoelectrochemical Performance of CdS Photoelectrode at Different Synthesis Temperatures" *B. Muhit; Z. S. Bayram; D. S. Bolhocalıoğlu; E. Yanar; E. Ö. Güven; İ. Kaba; İ. Kalkan; A. Koca; F. Karaca*

π47 "Interface-Driven ZIF-67/MXene Hybrid Electrocatalysts for Efficient Oxygen Evolution Reaction" *A. Niaei*

π67 "Experimental Analysis of Excess-Air, NO_x Emissions, and Condensation in Hydrogen-Enriched Industrial Premixed Burners" *S. BYRNE*

π80 "AI-Based Optimization of Hydrogen Production and Storage Systems" *M. Gamal; G. Lazaroiu; C. Strejoiu; C. Panait; I. Simion*

π84 "Strain-Tuned Piezoelectrocatalysis in H_2O-Intercalated $NaYTiO_4$ Perovskites: Insights from DFT for Efficient Water Splitting**"** *S. Mohammadi; A. Shokri; E. Doustkhah*

π91 "Influence of Electrocatalyst Calcination Temperature on the Performance of Alkaline Electrolysis" *T. H. Chiang; B. Lin*

π108 "Hydrogen from Wet Waste: Integrating Extraction and Supercritical Water Gasification " *C. Cannilla, A. Cajumi, S. Todaro, M. Santoro, C. Corrente, M. Samperi, G. Bonura*

π109 "Plant biomass, a source of H_2-rich gas production through gasification" *R. Grigoriu; L. Mihaescu; G. C. Lazaroiu; D. Stoica*

π110 "Multi-energy Vector Systems in Centralized Thermal Energy Network" *R. Grigoriu; G. Lazaroiu; A. Lazaroiu; I. Pisa; E. Pop*

π111 "Testing Procedures and Comparison of Diffusive Combustion of H_2 Versus CH_4" *R. Grigoriu; L. Mihaescu; A. E. Niculescu; I. Pisa; D. Stoica*

π284 "PET-Derived Ni-MOF as a Sustainable Electrocatalyst for Oxygen Evolution Reaction" *S. Sadighi; E. Doustkhah*

π288 "Defect Engineering in UiO-66 Toward Promising (Photo)Electrocatalytic Oxygen Evolution Reaction " *S. Sadighi; G. Kiztanir, E. Doustkhah; S. Demir*

π322 "Cobalt Phthalocyanine-Based Electrocatalyst for Hydrogen Evolution Reaction" *Ö. Akdağ; S. ŞAHİN; Z. ODABAŞ; A. R. ÖZKAYA*

π334 "Electrocatalytic Investigation of Ball-Milled Green Rust in Oxygen Evolution Reaction*"* *B. Pezeshki; R. Hassandoost; N. S. Peighambardoust; E. Doustkhah*

π321 "Microwave-Assisted Synthesis of $CdSe_2$/$MoSe_2$ Heterostructures for Dual-Function Electro- and Photocatalytic Hydrogen Production" *Ö. Akdağ; E. BİLGEN; A. KOCA; A. R. ÖZKAYA*

π349 "Design of a Treated Wastewater-Fed Green Hydrogen Production and Refueling Station: Konya, Türkiye" *Y. Emre Kurt, I. Dincer*

π155 "Hydrogen Injection into Natural Gas" E. Söylemez; A. Güneş

π19 "Investigation Hydrogen Absorption of Temperature Effects Lanthanum" A. Altuntepe

π97 "Enhanced Proton Conductivity of Sulfonated Polyether Sulfone Membranes Via Zirconium Phosphate Incorporation for PEM Fuel Cell Applications" A. Şahin; S. Güneş; A. Aytaç; F. Ç. Güldür; A. Tapan

π363 " Polyrhodanine Self-Assembled Monolayer Films as Substrates for Alkaline Water Electrolysis In 30% Koh Solution" R. Solmaz, H. Yüksel, Y. Aydın Dursun

Poster Session – 2 (Tuesday – May 12, 2026 | 10:30 – 10:50)

π131 "Design and Feasibility Analysis of a Hybrid PEM Fuel Cell LDUUV for Long-Endurance Turkish Maritime Operations" H. Öztürk; M. Ozhan; H. Koku; İ. Eroglu

π169 "Parametric Optimization of CO2 Hydrogenation for Light Olefins" O. Özcan

π170 "Interaction of Temperature, Pressure, and Feed Ratio in CO2-Assisted Propane Dehydrogenation" İ. Berber; O. Özcan

π208 "Safety Analysis of the Electrochemical Hydrogen Compressor Test System" Ş. Tezcan; R. G. Akay; M. Dilaver

π223 "Hydrogen Production via Hydrolysis and Methanolysis of Ethylenediamine Bisborane over Ru^0/CeO_2 CATALYST" S. Türk

π227 "SYNTHESIS OF CuInSe2 Particles by One Step Solvothermal Method" P. Yılmaz; A. Aytaç; A. M. Soydan; A. Ata

π230 "Energy-Efficient CCUS Simulation for Blue Hydrogen" F. Kesgin

π123 "Electrocoagulation of Textile Wastewater for Treatment and Hydrogen Production" Z. M. Özgen

π253 "Hydrogen Production via Water Splitting Technologies" Z. Kurt

π258 "Techno-Economic Assessment of Using Hydrogen as an Alternative Fuel in the Iron and Steel Industry" B. Ozyer; G. Balcioglu

π270 "A Preliminary Assessment of PEM Fuel Cell Systems for MALE-Type Unmanned Aerial Vehicles" C. Ö. ÇOLPAN; M. U. KARAOĞLAN; Ş. YAVUZ; Y. BALLI; D. BIYIK; A. CELIK; E. MAYDA; M. Soydan

π280 "Reduced Graphene Oxide Paper Based NiCo–Carbon Dot Composite Electrodes for Enhanced Electrochemical Energy Applications" S. Akdağ; M. E. Akkaya; K. U. Yıldırım; E. Ş. Cengiz; A. R. Özkaya

π281"Enhancing Green Hydrogen Production: One-Step Co-Electrodeposition of Hierarchical Copper Foams with Carbon Dots" M. E. Akkaya; S. Akdağ; K. U. Yıldırım; E. Ş. Cengiz; A. R. Özkaya

π299 "A Full-Scale Multi-Physics Model for PEM Water Electrolysis: Comparative Analysis of Multi-Channel Flow Field Designs" B. Jassam

π300 "Short Paper (A Full-Scale Multi-Physics Model for Water Electrolysis: A Comparative Analysis of Multi-Channel Flow Field Designs)" B. Jassam

π312 "From Carbide to Carbonitride: Structure-Dependent Photocatalytic Hydrogen Evolution in Titanium MXenes" K. Semerci; N. G. Erdem; Z. B. Sayan; Ö. Tuna; E. B. Şimşek

π314 "Synergistic Engineering of Ru–Cu-Based Electrocatalyst for Efficient Nitrate-to-Ammonia Conversion" M. Z. Nezhad

π317 "Pd-Intercalated Cesium Layered Titanate for Sustainable H2 Production." B. Cigerci; M. Behroozi; E. Doustkhah

π319 "Integrated Thermochemical Conversion of Posidonia Oceanica for Simultaneous Hydrogen-Rich Syngas, Biochar, and Wood Vinegar Production" D. Kurtdemir; E. Taylan; Ş. Arıcı

π330 "Hydrogen Evolution Via Methanolysis of $NaBH_4$ In the Presence of Copper Nanoparticles Loaded onto Optimized Rosa Canina Activated Carbon" E. ENGİNTEPE

π337 "Production of Hydrogen from $NaBH_4$ via Catalyzed Methanolysis Reaction with Patented Bayburt Tarragon Extract" M. A. Salik; M. Macit; E. Engintepe; S. Duman

π261 "Optimization of Green Hydrogen Production Via Deep Reinforcement Learning: A Proximal Policy Optimization Approach" N. Aksoy

π48 "MOF/MXENE Hybrid Architectures with Engineered Interfaces for Efficient Hydrogen Storage" Z. Yadi; N. Delibaş; A. Çoruh; A. Niaei

π273 "Ground Station Design and Performance Analysis for Hydrogen-powered UAVS" Ö. Karaman; A. Diliyok; Y. Çelik; M. Tulgar; C. Çolpan; M. Karaoğlan; Ş.Yavuz; O. Balta.

π162 "Polyaniline Based N-doped Carbon Supports for PEM Fuel Cells" E. Öner; M. N. Dursunoğlu; M. I. Aydın; A. Bayrakçeken

π234 "MOF-Derived Ce-Doped Fe_2O_3 Photoanodes for Photoelectrochemical Water Splitting" M. C. Peküz,İ. Bahçeci, İ. F. Ertiş

π51 "Regeneration of Carbon-Based Adsorbents Using the Taguchi Method: Life Cycle Extension and Sustainable Material Management Approach" Ö. İpsalalı; A. Katırcı; S. Kahraman; F. Nigiz

π53 "Production and Characterization of PVDF-Based Asymmetric Composite Membranes for Vanadium Redox Flow Batteries" E. Çolak; F. Nigiz

π336 " Recycling PET waste into carbonaceous materials with added value for electrochemical applications" T. Jilkova; R. Elashnikov; J. Lancok; Z. Kolska; V. Svorcik; O. Lyutakov